

## 1000—General

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## 1100 Introduction

### 1110 Application

- .01 These Standards of Practice apply to actuarial work in Canada. Responsibility for these Standards of Practice vests in the Actuarial Standards Board (Canada) and approval of standards and changes to standards are made through a process that includes consultation with the actuarial profession and other interested parties. They are intended for the benefit of the public. The work in Canada of a member of a professional actuarial organization is expected to conform to these Standards of Practice.
- .02 The existence of standards is not a substitute for professional judgment or consideration for the needs of the user(s) when performing specific work.
- .03 The authority of these Standards of Practice derives from the powers of those bodies that recognize them for actuarial work in Canada. Among others, these include professional actuarial bodies and relevant laws such as those regulating pensions and insurance. Compliance with these Standards of Practice is also likely to be taken into account when the quality of actuarial work is being considered in a court of law or in other contested situations. However, in such circumstances, deviation from any provision of these Standards of Practice should not, in and of itself, be presumed to be malpractice.

### 1120 Definitions

- .01 Each term set over dotted underlining has the meaning given in this subsection. A term that is not set over dotted underlining has its ordinary meaning.
- .02 Accepted actuarial practice is the manner of performing work in accordance with these Standards of Practice. Unless the context requires otherwise, it refers to work in Canada. [*pratique actuarielle reconnue*]
- .03 Actuarial cost method is a method to allocate the present value of a benefit plan's obligations to time periods, usually in the form of a service cost and an accrued liability. [*méthode d'évaluation actuarielle*]
- .04 Actuarial evidence work is work where the actuary provides an expert opinion with respect to any area of actuarial practice in the context of an actual or anticipated dispute resolution proceeding, where such expert opinion is expected or required to be independent. A dispute resolution proceeding may be a court or court-related process, a tribunal, a mediation, an arbitration, or a similar proceeding. Actuarial evidence work may include the determination of capitalized values in respect of an individual, or the provision of an expert opinion with respect to a dispute involving an actuarial practice area, such as pensions or insurance, or questions of professional negligence. [*travail d'expertise devant les tribunaux*]

- .05 Actuarial present value method is a method to calculate the lump sum equivalent at a specified date of amounts payable or receivable at other dates as the aggregate of the present values of each of those amounts at the specified date, and taking into account both the time value of money and, where appropriate, contingent events. [*méthode de la valeur présente actuarielle*]
- .06 Actuary, as it is used in these standards, means a member of a professional actuarial organization whose work in Canada is expected to conform to these standards. [*actuaire*]
- .07 Anti-selection is the tendency of one party in a relationship to exercise options to the detriment of another party when it is to the first party's advantage to do so. [*antisélection*]
- .08 Appointed actuary of an entity is an actuary formally appointed, pursuant to legislation, by the entity to monitor the financial condition of that entity. [*actuaire désigné*]
- .09 Appropriate engagement is one that does not impair the actuary's ability to conform to the precepts of ethical and professional conduct such as those that may be found in the Rules of Professional Conduct of the Canadian Institute of Actuaries or relevant law or regulation. Unless the context otherwise requires, wherever the word "engagement" is used in these standards it refers to an appropriate engagement. [*mandat approprié*]
- .10 Automatic balancing mechanisms automatically adjust contributions, benefits, and/or parameters of a plan in order to restore the balance between its source of financing and its benefits. The mechanism is prescribed by a set of predetermined measures to be taken, either immediately or later as prescribed, upon being triggered by certain demographic, economic, or financial indicators. [*mécanismes automatiques de compensation*]
- .11 Benefits liabilities are the liabilities of a plan in respect of claims incurred on or before a calculation date. [*obligations liées aux prestations*]
- .12 Best estimate means without bias. [*meilleure estimation*]
- .13 Calculation date is the effective date of a calculation; e.g., the calculation date in the case of a valuation for financial statements. It usually differs from the report date. [*date de calcul*]
- .14 Case estimate at a calculation date is the unpaid amount of one of, or a group of, an insurer's reported claims (perhaps including the amount of claim adjustment expenses), as estimated by a claims professional according to the information available at that date. [*évaluation du dossier*]
- .15 Claim adjustment expenses are internal and external expenses in connection with settlement and administration of claims. [*frais de règlement des sinistres*]
- .16 Claim liabilities are the portion of insurance contract liabilities in respect of claims incurred on or before the calculation date. [*passif des sinistres*]

- .17 Contingent event is an event that may or may not happen, or that may happen in more than one way or that may happen at different times. [*éventualité*]
- .18 Contribution is a contribution by a participating employer or a plan member to fund a benefit plan. [*cotisation*]
- .19 Contribution principle is a principle of policyholder dividend determination whereby the amount deemed to be available for distribution to policyholders by the directors of a company is divided among policies in the same proportion as policies are considered to have contributed to that amount. [*principe de contribution*]
- .20 Credibility is a measure of the predictive value attached to an estimate based on a particular body of data. [*crédibilité*]
- .21 Credit spread, for a fixed-income asset, is the yield to maturity on that asset minus the yield to maturity on a risk-free fixed income asset with the same cash flow characteristics. [*écart de crédit*]
- .22 Definitive refers to a matter that is final and permanent rather than tentative, provisional, or unsettled. [*décision définitive*]
- .23 Development of data with respect to a given coverage period is the change in the value of those data from one calculation date to a later date. [*matérialisation*]
- .24 Explanatory text is text that appears outside of a box in these standards. [*texte explicatif*]
- .25 External user is a user other than the actuary's client or employer. Internal user and external user are mutually exclusive. [*utilisateur externe*]
- .26 External user report is a report whose users include an external user. [*rapport destiné à un utilisateur externe*]
- .27 Financial condition of an entity at a date refers to its prospective ability at that date to meet its future obligations, especially obligations to policy owners, members, and those to whom it owes benefits. Financial condition is sometimes called “future financial condition”. [*santé financière*]
- .28 Financial position of an entity at a date is its financial state as reflected by the amount, nature, and composition of its assets, liabilities, and equity at that date. [*situation financière*]
- .29 To fund a plan is to dedicate assets to its future benefits and expenses. Similarly for “funded” and “funding”. [*provisionner*]

- .30 Funded status is the difference between the value of assets and the actuarial present value of benefits allocated to periods up to the calculation date by the actuarial cost method, based on a valuation of a pension plan, post-employment benefit plan, or social security program. [*niveau de provisionnement*]
- .31 Going concern valuation is a valuation that assumes that the entity to which the valuation applies continues indefinitely beyond the calculation date. [*évaluation en continuité*]
- .32 Indexed benefit is a benefit whose amount depends on the movement of an index such as the consumer price index. [*prestation indexée*]
- .33 Indicated rate is the best estimate of the premium required to provide for the corresponding expected claims costs, expenses, and provision for profit. [*taux indiqué*]
- .34 Insurance contract is a contract under which one party (the insurer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder. Insurance contract includes group insurance, third-party contracts where the owner of the contract and the person who is compensated (the policyholder) differ, and all like arrangements substantively in the nature of insurance. [*contrat d'assurance*]
- .35 Insurance contract liabilities in an insurer's statement of financial position are the liabilities at the date of the statement of financial position on account of the insurer's insurance contracts, including commitments, that are in force at that date or that were in force before that date. [*passif des contrats d'assurance*]
- .36 Insurer is the party that has an obligation under an insurance contract to compensate a policyholder if an insured event occurs. Insurer includes a fraternal benefit society and the Canadian branch of a foreign insurer, but does not include a public personal injury compensation plan or a post-employment benefit plan<sup>1</sup>. [*assureur*]
- .37 Internal user is the actuary's client or employer. Internal user and external user are mutually exclusive. [*utilisateur interne*]
- .38 Internal user report is a report all of whose users are internal users. [*rapport destiné à un utilisateur interne*]
- .39 Margin for adverse deviations is the difference between the assumption for a calculation and the corresponding best estimate assumption. [*marge pour écarts défavorables*]

<sup>1</sup> The wording of this definition is identical to the corresponding definition appearing in IFRS 4 appendix A, as of November 2009.

- .40 Model is a practical representation of relationships among entities or events using statistical, financial, economic, or mathematical concepts. A model uses methods, assumptions, and data that simplify a more complex system and produces results that are intended to provide useful information on that system. A model is composed of a model specification, a model implementation, and one or more model runs. Similarly for “to model”. [*modèle*]
- .41 Model implementation is one or more systems developed to perform the calculations for a model specification. For this purpose “systems” include computer programs, spreadsheets, and database programs. [*implémentation du modèle*]
- .42 Model risk is the risk that, due to flaws or limitations in the model or in its use, the actuary or a user of the results of the model will draw an inappropriate conclusion from those results. [*risque de modélisation*]
- .43 Model run is a set of inputs and the corresponding results produced by a model implementation. [*exécution d’un modèle*]
- .44 Model specification is the description of the components of a model and the interrelationship of those components with each other, including the types of data, assumptions, methods, entities, and events. [*spécifications du modèle*]
- .45 New standards means new standards, or amendment or rescission of existing standards. [*nouvelles normes*]
- .46 Periodic report is a report that is repeated at regular intervals. [*rapport périodique*]
- .47 Plan administrator is the person or entity with overall responsibility for the operation of a benefit plan. [*administrateur d’un régime*]
- .48 Policy liabilities in an insurer’s statement of financial position are the liabilities at the date of the statement of financial position on account of the insurer’s policies, including commitments, that are in force at that date or that were in force before that date. Policy liabilities consist of insurance contract liabilities and liabilities for policy contracts other than insurance contracts. [*passif des polices*]
- .49 Policyholder is a party that has a right to compensation under an insurance contract if an insured event occurs<sup>1</sup>. [*titulaire de police*]

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<sup>1</sup> The wording of this definition is identical to the corresponding definition appearing in IFRS 4 appendix A, as of November 2009.



- .50 Premium liabilities are the portions of insurance contract liabilities that are not claim liabilities. [*passif des primes*]
- .51 Prescribed means prescribed by these standards. [*prescrit*]
- .52 Property and casualty insurance is insurance that insures individuals or legal persons
- Having an interest in tangible or intangible property, for costs arising from loss of or damage to such property (e.g., fire, fidelity, marine hull, warranty, credit, legal expense, and title insurance); or
  - For damages to others or costs arising from the actions of such persons (e.g., liability and surety bonds) and for costs arising from injury to such persons (e.g., automobile accident benefits insurance). [*assurances IARD*]
- .53 Provision for adverse deviations is the difference between the actual result of a calculation and the corresponding result using best estimate assumptions. [*provision pour écarts défavorables*]
- .54 Public personal injury compensation plan means a public plan
- Whose primary purpose is to provide benefits and compensation for personal injuries;
  - Whose mandate may include health and safety objectives and other objectives ancillary to the provision of benefits and compensation for personal injuries; and
  - That has no other substantive commitments.
- The benefits and compensation provided under such public plans are defined by statute. In addition, such public plans have monopoly powers, require compulsory coverage except for those groups excepted by legislation or regulation, and have the authority to set assessment rates or premiums. [*régime public d'assurance pour préjudices corporels*]
- .55 Recommendation means text that appears in a box in these standards. Similarly for “recommend”. [*recommandation*]
- .56 Reinsurance recoverables in an insurer’s statement of financial position are the assets at the calculation date on account of reinsurance treaties, including commitments, that are in force at that date or that were in force before that date. [*sommes à recouvrer auprès des réassureurs*]
- .57 Related experience includes premiums, claims, exposures, expenses, and other relevant data for events analogous to the insured events under consideration other than the subject experience and may include established rate levels or rate differentials or external data. [*expérience connexe*]
- .58 Report is an actuary’s oral or written communication to users about his or her work. Similarly for “to report”. [*rapport*]

- .59 Report date is the date the actuary specifies as such in the report. It usually differs from the calculation date. [*date du rapport*]
- .60 Scenario is a set of consistent assumptions. [*scénario*]
- .61 Service cost is that portion of the present value of a plan's obligations that an actuarial cost method allocates to a time period, excluding any amount for that period in respect of unfunded accrued liabilities. [*cotisation d'exercice*]
- .62 Social security program means a program with all the following attributes regardless of how it is financed and administered:
- Coverage is of a broad segment, or all, of the population, often on a compulsory or automatic basis;
  - Benefits are provided to, or on behalf of, individuals;
  - The program, including benefits and financing method, is mandated by law;
  - The program is not financed through private insurance; and
  - Program benefits are principally provided or delivered in the form of periodic payments upon old age, retirement, death, disability, and/or survivorship.  
[*programme de sécurité sociale*]
- .63 Subject experience includes premiums, claims, exposures, expenses, and other data for the insurance categories under consideration. [*expérience visée*]
- .64 Subsequent event is an event of which an actuary first becomes aware after a calculation date but before the corresponding report date. [*événement subséquent*]
- .65 Trend is the tendency of data values to change in a general direction from one coverage period to a later coverage period. [*tendance*]
- .66 User means an intended user of the actuary's work. [*utilisateur*]
- .67 Virtually definitive refers to a matter that is almost certain, but that lacks one or more formalities like ratification, due diligence, regulatory approval, third reading, royal assent, or proclamation. However, a decision that still involves discretion at an executive or administrative level is not virtually definitive. [*pratiquement définitive*]

- .68 Work means work that is commonly, but not necessarily exclusively, performed by actuaries in assessing, measuring, and evaluating risks and contingencies and usually includes
- Acquisition of knowledge of the circumstances affecting the work that the actuary is undertaking;
  - Obtaining sufficient and reliable data;
  - Selection of assumptions and methods;
  - Calculations and examination of the reasonableness of their result;
  - Use of other persons' work;
  - Formulation of opinion and advice;
  - Reporting; and
  - Documentation. [*travail*]

## **1130 Interpretation**

### **Recommendations**

- .01 These standards consist of recommendations and explanatory text.
- .02 A recommendation is the highest order of guidance in these standards.
- .03 Each recommendation is in boxed text where it is accompanied by its effective date, shown in square brackets.

### **Explanatory text**

- .04 The explanatory text supports and expands upon the recommendations. The explanatory text consists of definitions, explanations, examples, and useful practices.

### **Effective date of recommendations**

- .05 The notice of adoption for new standards would indicate their effective date and whether early implementation is permitted and may provide additional direction regarding the application of new standards.
- .06 Subject to the notice of adoption, a recommendation applies to work with a calculation date that is on or after the recommendation's effective date. Superseded recommendations that were in effect at the calculation date would apply to work with a calculation date prior to the effective date of new standards unless early implementation is permitted and applied to the work.

### **General standards and practice-specific standards**

- .07 These standards consist of general standards and practice-specific standards. With the exception noted below, the general standards apply to all areas of actuarial practice. In addition, the standards in part 4000 apply to all areas of actuarial practice if the actuary's work in an area meets the definition of actuarial evidence work.
- .08 Usually, the intent of the practice-specific standards is to narrow the range of practice considered acceptable under the general standards.

- .09 In exceptional cases, however, the intent of practice-specific standards is to define as acceptable a practice that would not be acceptable under the general standards, in which case that intent is specifically noted by words in a practice-specific recommendation like: “*Notwithstanding the general standards, the actuary should...*”, followed by the explanatory text.

### **Drafting**

- .10 “Should” is the strongest mandating word in these standards, appearing only in recommendations, often in the expression, “The actuary should...”
- .11 “Would” is a suggestive word appearing in the explanatory text, often in the expression, “The actuary would...”, and is less forceful than the mandative “should”.
- .12 “May” is a permissive word, appearing in both recommendations and the explanatory text, often in the expression, “The actuary may...” and often with conditions attached. It defines a safe harbour. For example, in paragraph 1510.01, the recommendation is that “The actuary may use and take responsibility for another person’s work if such actions are justified.” and the explanatory text describes steps that constitute justification. The actuary who is satisfied that the actions are justified has done all that may be reasonably expected and has therefore complied with accepted actuarial practice, even if the use turns out not to be well-founded.
- .13 The examples are often simplified and are not all-inclusive.

### **1140 Judgment**

- .01 The actuary should exercise reasonable judgment in applying these standards. A judgment is reasonable if it is objective and takes account of
- The spirit and intent of the standards;
  - Precepts of ethical and professional conduct intended to guide the conduct of the actuary;
  - Common sense; and
  - Constraints on time and resources. [Effective February 1, 2018]

### **Need for judgment**

- .02 While these standards are drafted so that they are, as much as possible, understandable by lay persons, the judgment of the actuary is necessary for their application.
- .03 The exercise of judgment is not clear-cut, except perhaps in hindsight. A judgment that is reasonable at its making is not made unreasonable by later hindsight.

- .04 A judgment that is completely subjective would not be reasonable even though it may be based on honest belief. A reasonable judgment would be objective and demonstrably take account of the criteria listed in the recommendation and discussed below.
- .05 There is a reasonable range of assumptions that may be selected by an actuary for particular work and that might produce materially different results. Sometimes, it is desirable that actuaries produce results within a relatively narrow range, in which case the practice-specific standards may prescribe certain assumptions and/or methods to achieve that purpose.

**Spirit and intent**

- .06 In applying a specific standard, it is important to be guided by the spirit and intent behind it.

**Common sense**

- .07 A strained interpretation of a recommendation is inappropriate.
- .08 An outlandish result or a seeming impossibility of applying the standards would indicate either a misinterpretation of the standards or their inapplicability to the situation.

**Constraint on time and resources**

- .09 The actuary would normally perform work in compliance with accepted actuarial practice. However in some circumstances within the scope of an appropriate engagement, the actuary's work may be constrained by available time and resources. In such circumstances, the actuary would adopt an interpretation and application that strikes a reasonable balance between compliance and modifications due to the constraints, after consideration of accepted actuarial practice with respect to materiality and the use of approximations. The actuary would report to the user any deviation from accepted actuarial practice.

**1150 Accepted actuarial practice**

- .01 Work in Canada should conform to accepted actuarial practice except when it conflicts with law or the terms of an appropriate engagement. A user of the actuary's work may assume that it is in accordance with accepted actuarial practice except when the actuary reports otherwise.  
[Effective February 1, 2018]

- .02 These standards are the only explicit articulation of accepted actuarial practice for work in Canada. Explanation, examples, and other useful guidance may also be found in
- New standards, not yet effective but whose early implementation is appropriate;
  - Educational notes of the Canadian Institute of Actuaries;
  - Actuarial principles;
  - Exposure drafts;
  - Historical records;
  - Canadian and international actuarial literature; and
  - Practices that are generally accepted among actuaries and that are not in conflict with these standards.

The applicability and the relative importance of this other guidance for particular work is a matter for judgment.

- .03 Accepted actuarial practice is sometimes called “generally accepted actuarial practice” (for example, in the Insurance Companies Act (Canada)) or “generally accepted actuarial principles”.

### **1160 Scope**

- .01 These standards apply to work in Canada. [Effective February 1, 2018]
- .02 The application of any recommendations beyond their scope should take account of relevant circumstances. [Effective February 1, 2018]

### **Work in Canada vs. work in another country**

- .03 The distinction between work in Canada and work in another country depends primarily on the ultimate purpose of the work. It does not depend on where the actuary lives or where the actuary happens to be when doing the work.

- .04 Work in compliance with the laws or customs of a country or a particular region within that country is work in that country. Examples include
- A valuation of the liabilities of a pension plan of a Canadian subsidiary of a U.S. multinational for the consolidated financial statements of the multinational is work in the U.S.
  - If the work relates to taxation under the U.S. *Internal Revenue Code*, the work is work in the U.S. Thus, a valuation of the policy liabilities of the U.S. branch of a Canadian insurer for the insurer's U.S. income tax return is work in the U.S.
  - If the work relates to litigation under U.S. law before a U.S. court, the work is work in the U.S. Thus, a report to the lawyer of a Canadian defendant insured by a Canadian insurer on a claim for damages litigated under U.S. law in a U.S. court is work in the U.S.
- .05 There may be cases when the distinction is not clear; for example, advice to a Canadian insurer on products to be sold outside Canada. In some of those cases, accepted actuarial practice may be the same in both countries, so the distinction does not matter. If the distinction matters, the actuary would, if practical, agree with the user and report on the appropriate practice and, failing agreement, would report the implications of the distinction.

#### **Work outside Canada**

- .06 The best guidance for work in another country is the accepted practice for actuarial work in that country. This encompasses the formal guidance that the actuarial profession in that country provides for work in that country. If that guidance does not exist or is limited, these standards may provide useful guidance. The general standards are more likely to provide useful guidance than the practice-specific standards: in either case, however, the actuary would take account of differences between the laws and customs of the other country and those of Canada.





- .02 Usually, the actuary is responsible for all aspects of his or her work and performs it in accordance with accepted actuarial practice. The engagement to which the recommendation applies is usually one in which one or more aspects of work are omitted or are stipulated by the client or employer or the terms of a benefit plan. Examples include situations where
- The actuary uses, but does not take responsibility for, the software system, or the work, of the staff of the client or employer; and
  - The client or employer or the terms of a benefits plan stipulates an assumption or a method that is not in accordance with accepted actuarial practice.
- .03 Conflict between accepted actuarial practice and the law is not the same as conflict between accepted actuarial practice and the terms of an engagement. In the case of an engagement whose terms call for deviation from accepted actuarial practice, the actuary has discretion to accept or not to accept the engagement.
- .04 The practicality and usefulness of reporting a result in accordance with accepted actuarial practice are the same as for subsection 1210, Conflict with law.

### 1230 Unusual and unforeseen situations

.01 Deviation from a particular recommendation or other guidance in these standards is accepted actuarial practice for an unusual or unforeseen situation for which the standards are inappropriate<sup>2</sup>. [Effective February 1, 2018]

.02 The actuary would report without reservation when deviating from a particular recommendation or other guidance in these standards in accordance with this subsection 1230, but it may sometimes be appropriate to describe and justify the deviation in the report.

### 1240 Materiality

.01 Deviation from a particular recommendation or explanatory text in these standards is accepted actuarial practice if the effect of so doing is not material. [Effective February 1, 2018]

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<sup>2</sup> Actuaries are encouraged to bring such situations to the attention of the Actuarial Standards Board, who may wish to consider how standards might be improved so that they do contemplate such situations.





- .08 The effect of using a simpler practice requiring less time and expense than those in the recommendations may be conservative or not conservative. Usually, the criterion of materiality is the same in both cases.

**Reporting standards**

- .09 The result of applying a recommendation may provide information that is not useful. For example, disclosure of a material change in the basis for valuing the liabilities with respect to a material class of a benefit plan's members is not useful if that class was trivial at the previous valuation. Also, description of immaterial provisions of a benefit plan is not useful. To ignore the recommendation is accepted actuarial practice in that situation.

## 1300 The Engagement

### 1310 Accepting and continuing an engagement

- .01 In accepting an engagement, the actuary should agree on its terms with the actuary's client or employer and be satisfied that it is an appropriate engagement. [Effective February 1, 2018]
- .02 In performing the engagement, if the actuary becomes aware of information that, if known beforehand, would have been an impediment to acceptance of the engagement, the actuary should
- Renegotiate the engagement to remove the impediment;
  - Discontinue the engagement; or
  - Provided that the engagement continues to be an appropriate engagement, report the impediment and its implications. [Effective February 1, 2018]
- .03 The actuary would consider consultation with the predecessor actuary, if any, to determine whether there is any reason not to accept the engagement.

#### Terms of the engagement

- .04 The likelihood that work is satisfactory to all users concerned is enhanced by a clear understanding between the actuary and the client or employer on the terms of the engagement. Detailed identification of the time and resources involved, especially if they are substantial, and of the information needed to be communicated to and by the actuary, especially if it is sensitive or confidential, will avoid misunderstanding.

#### Appropriateness of engagement

- .05 The following guidance is useful in judging if the engagement is an appropriate engagement:
- An engagement is prima facie appropriate if there are practice-specific standards that apply to it, especially if it does not call for a deviation from accepted actuarial practice.
  - An engagement's appropriateness is not likely affected if the actuary's client or employer selects particular assumptions as part of the terms of the engagement and the report describes the assumption and identifies the source, or chooses a value for certain assumptions from within a range selected by the actuary.
  - An engagement to report on alternative scenarios or "What if?" questions is appropriate, given appropriate disclosure.

- An engagement is less likely to be appropriate if it denies reasonable opportunity for an external user to question the actuary about his or her report.
- .06 An engagement may involve a duty of confidentiality that conflicts with a recommendation on disclosure in reporting. That engagement would be appropriate, however, and the duty of confidentiality would supersede (at least temporarily) the duty of disclosure, if
- Confidentiality is necessary for the legitimate business objective of the client or employer;
  - The extent of the information to be kept confidential is reasonable;
  - The length of time for which it is to be kept confidential is reasonable; and
  - The duty of confidentiality permits reasonable exceptions; for example, if the actuary is permitted to disclose the information to, and to discuss the engagement with, an auditor or a regulator.
- .07 For example, the engagement may be appropriate if the actuary temporarily withholds knowledge of
- A mistake that favours his or her client in the report of the actuary engaged by the other side in litigation;
  - The imminent closure of a participating employer's Canadian operations and the consequent job loss and winding-up of the plan in giving advice on its funding, but the actuary would consider the need for an early revaluation or wind-up valuation; or
  - An insurer's imminent acquisition by new shareholders who will alter its business plan in reporting in the insurer's financial statements, but the actuary would consider the implications of the new business plan in reporting to the insurer's directors on financial condition.
- .08 That engagement would not be appropriate, however, if the information is to be kept confidential in order to conceal improper business conduct, or to withhold information from users of the actuary's work who may reasonably expect the actuary to report it to them.
- .09 Any duty of confidentiality would give way to a duty of disclosure if disclosure is mandated by law, or if disclosure is required by a professional body to whom the actuary is subject.

- .10 Whether an engagement is appropriate depends on the actuary as well as on the engagement. For example, an actuary would not accept an engagement to perform work that the actuary is not qualified to do or where the actuary has an undisclosed conflict of interest.

### **Subsequent information**

- .11 While performing the engagement, the actuary may become aware of information that, if known beforehand, would have been an impediment to acceptance of the engagement. For example,
- The actuary's understanding of the engagement differs from that of the client or employer;
  - The data are not sufficient or not reliable and cannot be remedied; or
  - Promised resources are not forthcoming and a substitute for them is not practical.
- .12 Renegotiation that removes the impediment would usually be the preferred alternative. Discontinuance would be the only alternative if the new information reveals the engagement not to be appropriate and renegotiation to make it so is impractical, which would be the case, for example, if an appointed actuary is denied access to needed information.
- .13 Failing renegotiation or discontinuance, the actuary would deal with the impediment by reporting it and its implications. Description of the implications would include both qualitative and quantitative aspects and their effect on the actuary's opinion.

### **1320 Financial interest of the actuary**

- .01 The financial interest of the actuary should not influence the result of the actuary's work. [Effective February 1, 2018]

### **1330 Financial interest of the client or employer**

- .01 The financial interest of the actuary's client or employer should not influence the result of the actuary's work except to the extent that the client or employer selects assumptions or methods for the work. [Effective February 1, 2018]
- .02 The actuary's client or employer may have a financial interest in the result of the actuary's work. For example, it may be in the client's or employer's interest to maximize or minimize the result. That is usually the case when the actuary's client is one side of opposing interests; for example, the plaintiff or defendant in litigation, the purchaser or vendor in a sale, and the employer or union in labour negotiations.
- .03 In such a case, the actuary's duty of professionalism supersedes the duty of service to the client or employer.

- .04 In giving advice to a participating employer regarding the funding of a benefit plan, the actuary may first calculate a range, at any point of which funding would be appropriate. That range is the crux of the work, so a participating employer's financial interest would not influence its calculation. It is, however, appropriate and usually desirable for the actuary to consult the participating employer in the selection of the recommended funding within the range. The participating employer's financial interest—for example, the participating employer's tolerance of fluctuation in the recommended rate of funding between one funding period and the next—would be taken into account in that consultation.
- .05 Note, however, that the recommendation does not preclude the actuary's use of assumptions or methods selected by the client or employer in an appropriate engagement, but the actuary would report such use.
- .06 Note also that the purpose of the work will influence the actuary's selection of assumptions and methods. The financial interest of the client or employer may shape the purpose of the work if the engagement is an appropriate engagement and the purpose is reported.

### 1340 General knowledge

- .01 The actuary should have adequate knowledge of the conditions in the practice area in which the actuary is working. [Effective February 1, 2018]
- .02 Where the actuary's work in a practice area meets the definition of actuarial evidence work, the actuary should have adequate knowledge of the conditions in both the practice area in which the actuary is working and the actuarial evidence practice area. [Effective February 1, 2018]

- .03 The relevant conditions may include legislation, accounting, taxation, the financial markets, family law, and court practices. The relevant legislation depends on the engagement, and may include legislation governing securities, pensions, insurance, workers' compensation, and employment standards.

### 1350 Knowledge of the circumstances affecting the work

- .01 The actuary should take into account the circumstances affecting the work that the actuary is undertaking. [Effective February 1, 2018]
- .02 The circumstances affecting the work include the purpose of the work, the terms of the appropriate engagement under which the work is being performed, and the application of the law to the work.
- .03 The relevant knowledge for a corporate entity or benefit plan is that of the operations of the entity itself and may include that of the industry in which the entity operates. Usually, the entity is the actuary's client or employer but may be a proposed acquisition or merger partner of the client or employer.



- .04 In the case of a benefit plan, the entity is the plan itself, but, depending on the engagement, knowledge of the business conditions of the participating employer(s) may also be relevant.
- .05 The relevant knowledge for calculation with respect to an individual is the demographics of the individual and the context of the calculation.
- .06 Additional conservatism in making a calculation is not a substitute for knowledge of the circumstances affecting the work.











.09 If an event provides information about the entity as it was at the calculation date or provides information that retroactively makes the entity different at the calculation date, the effect of the subsequent event on the work is the same as if the actuary first became aware of the information on or before the calculation date and the actuary would not report the event as a subsequent event. That is, the actuary would report the event only to the extent that the event would have been reported had the actuary first become aware of the information before the calculation date.

**Event makes entity different after**

- .10 If the subsequent event makes the entity different after the calculation date, the purpose of the work determines whether or not the actuary takes the event into account.
- .11 If the subsequent event makes the entity different after the calculation date and the purpose of the work is to report on the entity as it will be as a result of the event, the actuary would take that event into account and would describe it in reporting.
- .12 If the subsequent event makes the entity different after the calculation date and the purpose of the work is to report on the entity as it was at that date, the actuary would not take that event into account but would report the event since it would affect the entity's future operations and the actuary's subsequent calculations.





## Reporting

- .14 Sometimes, either because the actuary considers it appropriate or the terms of the work require it, the actuary may report as an alternative the opposite calculation; i.e., one that does not take the subsequent event into account when the main calculation does, or that takes the subsequent event into account when the main calculation does not. For example, in a province for which the calculation date for a pension valuation following marriage breakdown is the date of separation, a subsequent event may be the early retirement of the plan member at some time between the calculation date and the report date. The actuary would consider reporting values assuming that this subsequent event had been an established intention at the calculation date, instead of or in addition to retirement scenarios otherwise recommended in the practice-specific standards. In such cases, the actuary would make the same calculations regardless of the purpose of the work but the reporting thereof would depend on the purpose of the work.

## 1440 Data

- |  |
|--|
| <p>.01 The <u>actuary</u> should apply such procedures as are necessary for the <u>actuary</u> to arrive at a conclusion as to the sufficiency and reliability of the data. [Effective February 1, 2018]</p> |
|--|
- .02 Data relevant to the work may include experience data, membership or policyholder data, census data, claims data, asset and investment data, economic data, operational data, benefit definitions, and policy or contract terms and conditions and other data relevant to the work.
- .03 Sources of data may include data obtained from inventory or sampling methods. Data may be obtained directly by the actuary or may be provided to the actuary by the client, by an accountant or auditor, by a government or statistical body, from a financial statement, or by others. Data may be specific to the client. Where data specific to the client are not available or not relevant, the actuary would consider using industry data, population data, or other published data with suitable adjustments where relevant and appropriate.

### Sufficiency and reliability

- .04 Data are sufficient if they include the needed information for the work. For example, participants' dates of birth are needed to value the liabilities of a pension plan.
- .05 Data are reliable if they are sufficiently complete, consistent, and accurate for the purposes of the work.











## 1500 Another Person's Work

### 1510 Actuary's use of another person's work

- .01 The actuary may use and take responsibility for another person's work if such actions are justified. If the actuary uses but does not take responsibility for another person's work, the actuary should so report. [Effective February 1, 2018]
- .02 Where the work involves the use of data provided by another person, subsection 1440 Data applies.
- .03 Use of the work of other persons is a usual, indeed often inevitable, part of work. The actuary uses and takes responsibility for the work of colleagues and assistants; that use is usually straightforward because the actuary is able to assess the appropriateness of their work.
- .04 If the actuary uses the work of a person other than colleagues and assistants, the actuary may or may not take responsibility for that person's work. Taking responsibility may require more work of the actuary and may expose the actuary to risk of legal liability, but may give the user greater confidence that the other person's work is appropriate.
- .05 The actuary would not take such responsibility if doing so would lead a reasonable person to believe that the actuary possessed and purported to exercise the skill and learning of a duly qualified professional in that other person's profession.
- .06 If the actuary does not take such responsibility, the actuary reports with reservation and the user would seek alternative assurance that the other person's work is appropriate, which may or may not be practical.

#### Use and take responsibility

- .07 The actuary may use and take responsibility for another person's work, given confidence that such actions are justified as a result of considerations such as the following:
- Early and periodic communication with the other person;
  - Confidence in the other person's qualifications, competence, integrity, and objectivity;
  - The other person's awareness of how the actuary intends to use the other person's work;

- Communication to the other person of any information known to the actuary that may affect the other person's work, and vice versa; and
  - Study of any report by the other person and discussion of it with the other person, especially of any reservation in the report.
- .08 The Canadian Institute of Actuaries encourages its members to use the work of an auditor in accordance with the Joint Policy Statement included in subsection 1520 of these standards of practice. The Joint Policy Statement also provides useful guidance if the actuary uses the work of a person other than an auditor.
- .09 Although an actuary may take responsibility for the work of another actuary in accordance with this section, the actuary who performed the work also continues to be responsible for that work.
- .10 In the case of use of another actuary's work, it may also be useful to
- Identify the differences between accepted actuarial practice in Canada and the practice that the other actuary followed if the other actuary worked outside of Canada; and
  - Review the other actuary's working papers.
- .11 The actuary need not report use of another person's work if the actuary takes responsibility for that work. To do so may imply a reservation.

**Use but not take responsibility**

- .12 If the actuary uses but does not take responsibility for another person's work, the actuary would nevertheless examine the other person's work for evident shortcomings and would either report the results of such examination or avoid use of the work. For clarity, even though the other person may use a model in his or her work, the actuary is not considered to have used that model.

**1520 Auditor's use of an actuary's work**

- .01 The actuary should cooperate with an auditor who wishes to use the actuary's work in accordance with the following Joint Policy Statement. [Effective February 1, 2018]



## Joint Policy Statement

concerning communications between auditors and actuaries  
involved in the preparation of financial statements

This Joint Policy Statement, effective October 1, 2007, has been approved by the Actuarial Standards Board (Canada) and by the Auditing and Assurance Standards Board (Canada).

### Purpose and application

- 1 The purpose of the Joint Policy Statement is to discuss:
  - a) communications between actuaries involved in the preparation of financial statements, and auditors, regarding their respective responsibilities;
  - b) how those actuaries and auditors would interact in carrying out their respective responsibilities; and
  - c) how their respective responsibilities may be disclosed to readers of financial statements.
- 2 This Statement applies when an auditor is engaged to carry out an audit of financial statements in accordance with generally accepted auditing standards where the financial statements prepared by management include amounts determined by or with the assistance of an actuary. This Statement also applies when an actuary considers the work of an auditor in connection with conducting the actuarial valuation to determine amounts to be included in the financial statements prepared by management. This statement does not apply to communications with an auditor's actuary or an external review actuary.
- 3 The financial statements of a pension plan or post-employment benefits plan and of the sponsor of such plans, and the financial statements of an insurance enterprise, are the best examples of when this Statement applies.

Definitions

- 4 For the purposes of this Statement:
- a) “actuary involved in the preparation of financial statements” means an actuary, either an employee of the company or an independent consultant, who determines and reports on amounts to be included in the financial statements prepared by management.
  - b) “applicable professional standards” means:
    - i) when the responding professional is an actuary, the Standards of Practice and the Rules of Professional Conduct of the Canadian Institute of Actuaries; and
    - ii) when the responding professional is the auditor, the Canadian Auditing Standards in the CICA Handbook-Assurance and the relevant independence and other ethical requirements set out in the rules of professional conduct/code of ethics applicable to the practice of public accounting issued by various professional accounting bodies.
  - c) “auditor” means an auditor who has been appointed to perform an audit and report on financial statements or to perform specified procedures on data;
  - d) “auditor’s actuary” means an appropriately qualified actuary who assists the auditor in assessing risk and performing further audit procedures to respond to assessed risk;
  - e) “data” includes particulars of:
    - i) invested assets of a pension plan or post-employment benefits plan or an insurance enterprise,
    - ii) membership of a pension plan or post-employment benefits plan,
    - iii) policies of and claims against an insurance enterprise, and
    - iv) reinsurance of an insurance enterprise;
  - f) “enquiring professional” means the actuary or the auditor, as the case may be, who is considering the work of the other;
  - g) “external review actuary” means an actuary who reviews the work of another actuary at the request of a regulator and provides an opinion to the regulator as to whether the work meets applicable professional standards and accepted actuarial practice;

- h) “insurance enterprise” includes the following enterprises, including companies, branches, fraternal benefit societies and other forms of organizations:
  - i) life insurance enterprises;
  - ii) property and casualty insurance enterprises;
  - iii) reinsurance enterprises; and
  - iv) workers’ compensation enterprises.
- i) “management” refers to any person(s) having authority and responsibility for planning, directing and controlling the activities of an enterprise;
- j) “responding professional” means the actuary or the auditor, as the case may be, whose work is being considered by the other.

#### Responsibilities with respect to financial statements

- 5 The financial statements are the responsibility of management. The representations contained in the financial statements may include amounts determined by an actuary. In determining those amounts, the actuary is responsible for assessing the sufficiency and reliability of the data used in the valuation. The actuary may consider the work of an auditor with respect to data integrity and controls. In such cases, the actuary involved in the preparation of the financial statements acts as the enquiring professional and the auditor acts as the responding professional.
- 6 The auditor, on the other hand, has a responsibility to express an opinion on the fairness with which the financial statements present the financial position, results of operations and cash flows in accordance with the applicable financial reporting framework, which will normally be generally accepted accounting principles. When the financial statements include amounts determined by an actuary, the auditor considers the work of the actuary as part of the audit evidence supporting the actuarial valuation. In such cases, the auditor acts as the enquiring professional and the actuary involved in the preparation of the financial statements acts as the responding professional.

#### Considering the responding professional’s work

- 7 The enquiring professional may consider the work of the responding professional provided that the enquiring professional takes reasonable care to determine that there is a basis for such consideration. This is done by communicating with the responding professional to establish an understanding of the work to be carried out by each and by considering:
  - a) the responding professional’s appointment to do the work;
  - b) whether the responding professional has followed the standards of his or her profession in carrying out the work; and
  - c) the appropriateness of the responding professional’s findings and opinion.

Communication between the two professionals

- 8 Communication would be established between the auditor and the actuary involved in the preparation of the financial statements when planning their respective engagements, and further communication would take place as necessary throughout the engagement.
- 9 On a timely basis, each professional seeks from management the right to:
  - a) communicate with the other professional; and
  - b) when necessary disclose any relevant information to the other professional.
- 10 The enquiring professional would:
  - a) inform the responding professional of the intended consideration of his or her work in accordance with this Statement;
  - b) request confirmation from the responding professional that he or she has been engaged by the shareholders, policyholders, directors, or management to do the work that the enquiring professional intends to consider;
  - c) request confirmation from the responding professional that he or she is a professional in good standing;
  - d) request confirmation from the responding professional that he or she will carry out the work required in accordance with the applicable professional standards; and
  - e) make the responding professional aware of the enquiring professional's needs. This would include a discussion of:
    - i) the application of the concept of materiality to determine that the responding professional will be using a materiality level that is appropriate in relation to the enquiring professional's materiality level in accordance with applicable professional standards;
    - ii) subsequent events, to determine that the responding professional understands how they are to be treated and that he or she will consider the effect of matters that come to his or her attention up to the date of his or her report;
    - iii) the timing of the work to be carried out by the responding professional and the date of his or her report; and
    - iv) any questions relating to the responding professional's work.

- 11 The responding professional would provide a written response to the enquiring professional that would:
- a) confirm the expectation that he or she is available to perform the work that the enquiring professional intends to consider;
  - b) confirm that he or she has been engaged by the shareholders, policyholders, directors, or management to do the work that the enquiring professional intends to consider;
  - c) confirm that he or she is a professional in good standing;
  - d) confirm that he or she is qualified to perform the work that the enquiring professional intends to consider (including having the certifications or designations, if any, required for particular areas of practice);
  - e) confirm that this work will be carried out in accordance with the applicable professional standards;
  - f) confirm awareness of the enquiring professional's intended consideration of his or her work; and
  - g) discuss any problems expected in meeting the needs of the enquiring professional on a timely basis.

The responding professional's qualifications, competence, and integrity

- 12 In the case of an auditor, prima facie evidence of professional qualification is membership in good standing in a professional accounting body. In the case of an actuary, prima facie evidence of professional qualification is fellowship in good standing in the Canadian Institute of Actuaries.
- 13 When the responding professional is not well known to the enquiring professional, the enquiring professional may obtain assurance as to the responding professional's reputation for competence and integrity by consulting with others who are familiar with the responding professional's work.

The responding professional's findings

- 14 The responding professional's written response to the enquiring professional after completion of the work would:
- a) identify the purpose of the work;
  - b) identify the financial statements or data to which it relates;
  - c) identify the responding professional's relationship to the entity to which the financial statements or data pertain;
  - d) confirm awareness that the enquiring professional intends to consider the work in accordance with this Statement; and
  - e) when appropriate, include a copy of the report provided to the party who employed or engaged the responding professional that sets out the findings and, when applicable, opinions of the responding professional, including a representation that the work was performed in accordance with the applicable professional standards.
- 15 When the enquiring professional has a question about an aspect of the responding professional's work, the question would be raised with the responding professional who would provide a reasonable explanation about that aspect of his or her work. This does not, however, limit the right of the enquiring professional to any information or explanation that may be required in the performance of his or her duties in accordance with the applicable professional standards.

Disclosure of respective responsibilities to the readers of financial statements

- 16 When required by law or regulation, a description of the respective responsibilities of the auditor and of the actuary involved in the preparation of the financial statements would accompany the financial statements.

### 1530 Review or repeat of another actuary's work

- .01 In this subsection 1530,
- “first actuary” means an actuary whose work is reviewed or repeated,
  - “review engagement” means an engagement to review the first actuary's work,
  - “reviewer” means the actuary engaged to review or repeat the first actuary's work, and
  - “repeat engagement” means an engagement to repeat all or part of the first actuary's work.
- .02 The standards in this subsection 1530 apply to a review engagement that is at the instigation of a user. They do not apply to quality control in the first actuary's firm or employer (sometimes referred to as “internal peer review” or “internal audit”), even if the reviewer is external to the first actuary's firm or employer. The standards for a review engagement also apply, mutatis mutandis, to a repeat engagement.

- .03 If the terms of the first actuary's engagement so permit, then the first actuary should cooperate with the reviewer. [Effective February 1, 2018]
- .04 If the terms of the review engagement so permit, then the reviewer should, as soon as practical, discuss the review with the first actuary (unless the reviewer's agreement with the first actuary's work makes such discussion superfluous), and should attempt to resolve any difference between them. The reviewer should report the result of such discussion. [Effective February 1, 2018]
- .05 If the reviewer reports disagreement with the first actuary's work but that work is within the range of accepted actuarial practice, then the reviewer should so report. [Effective February 1, 2018]
- .06 If a limitation in time, information, data, or resources constrained the quality of the first actuary's work, then the reviewer should so report. [Effective February 1, 2018]
- .07 If discussion between the two actuaries results in improvement to the first actuary's work or, in the case of periodic reporting, to the work expected for the subsequent report, then the reviewer should so report. [[Effective February 1, 2018]
- .08 If the first actuary's work is not within the range of accepted actuarial practice, then the reviewer should so report. [Effective February 1, 2018]

.09 A repeat engagement is an appropriate engagement if its purpose is to identify or reduce uncertainty in the matter on which the first actuary reported. [Effective February 1, 2018]

### **Selection of reviewer**

- .10 The reviewer may be engaged by a user of the first actuary's work or by the first actuary. The latter may not be appropriate if the interests of that user and the first actuary's client or employer are opposed, but otherwise has the merit of
- facilitating compliance with this subsection 1530;
  - helping to assure selection of a qualified reviewer; and
  - avoiding unnecessary duplication by the reviewer of the first actuary's work.
- .11 In selecting a reviewer or agreeing the terms of the engagement, then the first actuary would have regard to the user's objective for the review and would consult with the user as appropriate.
- .12 If an actuary is qualified to perform the work of the first actuary, then that is prima facie evidence that the actuary is qualified to be the reviewer.
- .13 The perceived objectivity of the reviewer is enhanced if the reviewer is independent of the first actuary.

### **Terms of the engagement**

- .14 The review may take place prior to the release of the first actuary's report ("pre-release review") or after such release ("post-release review"). A pre-release review provides the opportunity for the reviewer to suggest improvement to the work. A post-release review allows such improvement to be implemented only in future work and in some cases might require a withdrawal of the report and revision to the work. A post-release review would therefore be avoided unless the circumstances of the case require it.
- .15 It is desirable that the terms of the engagement permit timely open discussion between the two actuaries. Such discussion
- facilitates the review,
  - lessens the possibility of reviewer misunderstanding or of unwarranted damage to the first actuary's reputation,
  - reveals possible improvement to the first actuary's work, even if the work is in accordance with accepted actuarial practice, and
  - contributes to the professional development of both actuaries.



### **Difference between the two actuaries**

- .16 It is possible for two actuaries properly to arrive at different results. Avoidance of a dispute about a difference which is not material, or explanation of a difference which is material, serves users and helps to preserve the reputation of the profession.
- .17 If the reviewer has access to different data, information, or resources, or has different time constraints, then the reviewer would so report.
- .18 Insufficiency or unreliability in the data creates uncertainty for both actuaries and increases the likelihood of reviewer disagreement with the first actuary's work. If better data are likely to narrow the range of the disagreement, then the reviewer would so report.
- .19 Discussion between the two actuaries is educational to both and may reveal possible improvements to the first actuary's work. The reviewer's report of those improvements assists the user to assess the utility of the review engagement. It may not be possible to identify those improvements that result from early discussion on matters which the first actuary had not yet decided.
- .20 Review by a third actuary of the reviewer's tentative disagreement with the first actuary's work may help to put the difference between them in perspective.

### **Review engagement which precludes discussion between the two actuaries**

- .21 The reviewer would consider the appropriateness of a review engagement that precludes discussion with the first actuary, especially if the first actuary will not be apprised that the review is to take place. The engagement may be an appropriate engagement, for example, where
  - the interests of the first actuary's client or employer and the reviewer's client or employer are opposed, especially so in the case of actuarial evidence work involving litigation or mediation.
  - the reviewer's client or employer is the police or regulatory authorities who are investigating the first actuary's conduct or the conduct of the first actuary's client or employer.
  - the review is merely preliminary to a further review in which timely open discussion between the two actuaries will be possible.
  - discretion by the users of the reviewer's report is assured.

- .22 For example, in the case of actuarial evidence work involving litigation or mediation, the reviewer may be asked to report, without discussion with the first actuary,
- results based on assumptions which differ from those in the first actuary's report, or
  - alternatives to the first actuary's reported results that are within the range of accepted actuarial practice.
- .23 An engagement that limits or delays discussion between the two actuaries may be an appropriate engagement if the reviewer's client or employer wants to ensure that the two reports are independent of each other.

**Repeat engagement**

- .24 In order to identify or reduce uncertainty, the first actuary's client or employer may ask a second actuary to repeat the first actuary's work. A repeat engagement usually requires more time and expense than a review engagement. The second actuary may or may not have knowledge of, or access to, the first actuary's work. If the second actuary knows or suspects that the engagement is a repeat engagement, then he or she would take into account the possibility that the client or employer is "opinion shopping" when determining if it is an appropriate engagement.

## 1600 Assumptions and Methods

### 1610 Methods

- .01 The actuary should select a method that takes account of the circumstances affecting the work. [Effective February 1, 2018]
- .02 The basis for calculating actuarial estimates is comprised of a method and one or more assumptions. Methods represent the underlying manner in which actuarial calculations are undertaken. Methods differ from one area of actuarial practice to another and have differed over time.
- .03 In selecting an appropriate method, the actuary would consider whether any method is mandated by law, by practice-specific standards or by the terms of the engagement.

### 1620 Assumptions

- .01 The actuary should identify and select each assumption that is needed for the work, except for those that are prescribed, that are mandated by law or that are stipulated by the terms of the engagement. [Effective February 1, 2018]
- .02 The actuary should select an appropriate model or data assumption for a matter as the best estimate assumption relating to that matter, modified, if appropriate, to make provision for adverse deviations. In selecting an assumption, the actuary should take account of the circumstances affecting the work, past experience data, the relationship of past to expected future experience, anti-selection, and the relationship among matters. [Effective February 1, 2018]
- .03 The appropriate assumption for a matter, other than a model or data assumption, should be continuation of the status quo, unless there is none or unless there is a reasonable expectation that it will change, and the actuary so reports. [Effective February 1, 2018]
- .04 Throughout the standards, the word “calculation” appears, but not as a defined term. It can imply a mathematical operation as simple as adding two numbers or as complex as a scenario of dynamic capital adequacy testing. “Calculation” does not necessarily imply that a model is used. The word “calculation”, when used in the context of a model, emphasizes the result of a model run and to a lesser extent model specification and model implementation.
- .05 It may be useful, under the terms of the engagement, to report the result of two assumptions without opining on their relative appropriateness and to recommend that each user select that which meets his or her needs.

### **Model assumptions**

- .06 The model assumptions are quantitative assumptions in a model about
- Contingent events;
  - Investment return and other economic matters, such as price and wage indices; and
  - Numerical parameters of the environment, such as the income tax rate.
- .07 There is a model assumption for each of the matters that the actuary's model takes into account. Those matters would be sufficiently comprehensive for the model reasonably to represent reality.
- .08 A model, whether simple or complex, requires model assumptions. The model depends on the purpose of the work and the sensitivity of the model run to the various matters about which assumptions could be made. The actuary would strike a balance between the complexity needed for reasonable representation of reality and the simplicity needed for a practical calculation. If the model specification does not take into account a matter, the result is an implicit assumption about that matter, usually an assumption of zero probability or of zero rate. The actuary may compensate for an inappropriate implicit assumption regarding a matter that the model specification does not take into account by altering the explicit assumption regarding a matter that the model does take into account.
- .09 For models with interrelated model assumptions, the actuary would consider the interaction between assumptions.

### **Data assumptions**

- .10 Data assumptions are the assumptions, if any, needed to relieve insufficiency or unreliability in the data.
- .11 The available data may be not sufficient or not reliable. For example, files of pension plan members may lack the date of birth of the members' spouses. Based on sampling, or on comparison with comparable data, it may be appropriate to assume a relationship between spouse and member ages; for example, that a male spouse's date of birth is three years before the member's, and that a female spouse's date of birth is three years after the member's.

### **Assumptions other than model and data assumptions**

- .12 The assumptions other than model and data assumptions are the assumptions about the legal, economic, demographic, and social environment upon which the model and data assumptions depend.

- .13 Such other assumptions are usually qualitative, dealing with the environment; for example,
- Legislation, like the Income Tax Act (Canada);
  - Student education;
  - The medical care system;
  - Government social security systems; and
  - International treaties.
- .14 Those assumptions are needed to the extent that the model assumptions and, in some cases, the data assumptions depend upon them. Such assumptions are numerous and it is not practical to identify all of them.
- .15 Continuation of the status quo is usually the appropriate assumption for other than model and data assumptions; for example, an assumption that the fund of a registered pension plan continues not to be taxed or that the capital markets remain more or less as they are. Users may infer that assumption except where the actuary reports otherwise. The actuary would report an assumption
- That is different from continuation of the status quo; and
  - Regarding a matter for which there is no status quo, for example, a student's assumed occupation after completion of education.

#### **Acceptable range**

- .16 There is a reasonable range of assumptions that may be selected by an actuary for particular work and that might produce materially different results. Sometimes, it is desirable that actuaries produce results within a relatively narrow range, in which case the practice-specific standards may prescribe certain methods and/or assumptions to achieve that purpose.

#### **Circumstances affecting the work**

- .17 Knowledge of the circumstances affecting the work may require consultation with the persons responsible for the functions that affect experience. For example, if the calculation is to value the assets or liabilities of a benefits plan, the actuary would consult the persons responsible for investments, administration, and plan provisions. If the calculation is to value the policy liabilities of an insurer, the actuary would consult the officers responsible for investments, underwriting, claims, marketing, product design, policy dividends, and policy servicing.
- .18 An assumption about a matter would take account of the circumstances affecting the work if those circumstances affect that matter. The circumstances affecting the work are relevant for experience in most matters other than economic matters.

### **Past experience data**

- .19 The available and pertinent past experience data are helpful in the selection of assumptions.
- .20 Other things being the same, pertinent past experience data are data
- Relating to the case itself rather than to similar cases;
  - Relating to the recent past rather than to the distant past;
  - That are homogeneous rather than heterogeneous; and
  - That are statistically credible.

These criteria may conflict with each other.

### **Expected future experience vs. past experience**

- .21 To extrapolate pertinent past experience and its trend to the near future is often, but not necessarily, appropriate.
- .22 The appropriateness of the extrapolation depends on the matter assumed. For example, pertinent past mortality experience is a better indicator of the outlook than is pertinent past investment return experience.
- .23 An extrapolation would take account of a change that affects the outlook. For example,
- Adoption of a subsidized early retirement option in a pension plan may affect retirement rates;
  - A change in an insurer's case estimate practices may affect its claims development;
  - An insurer's discontinuance of a line of business may affect its expense rates allocable to the remaining lines; and
  - A change in judicial practice may affect the settlement of claims.

### **Anti-selection**

- .24 Each assumption would normally take account of potential anti-selection.
- .25 One party in a relationship may have the right (or the administration of the relationship may give the privilege) to exercise certain options. That party may be, for example, an insurer's policy owner, a benefits plan's member, a borrower, a lender, or a shareholder.

- .26 Examples are the right or privilege of a
- Pension plan member to select his or her retirement date when the pensions at various retirement ages are not actuarially equivalent;
  - Policy owner to renew term life insurance at its expiry for a stipulated premium;
  - Mortgagor to prepay principal, or an issuer to call a bond or redeem a preferred share; and
  - Shareholder to retract a share.
- .27 When considering a single relationship, it is reasonable to expect that party to exercise those options to the detriment of the other party in the relationship if it is to the first party's advantage to do so. However, where a number of such relationships are concerned, such as a portfolio of policy owners or members of a benefit plan, it may not be reasonable to assume that every one of these would exercise such an option in that manner.
- .28 The extent of anti-selection depends on
- The size of the advantage from each exercise of the option (for example, anti-selection is dampened if the advantage to each policy owner is small even when the aggregate potential detriment to an insurer is large);
  - The concomitance of exercise of the option (for example, election of a favourable early retirement pension may force the plan member into unwanted unemployment, or a policy owner (who is also the life insured) in ill health may be unable to afford to continue an insurance policy with a low premium);
  - The policy owner's or plan member's difficulty in making the required judgment (for example, everyone knows his or her age, but a person may be unable to gauge the effect of ill health on longevity); and
  - The sophistication of the policy owner, plan member, borrower, lender, or shareholder.

**Independently reasonable and appropriate in the aggregate**

- .29 The assumptions that the actuary selects or for which the actuary takes responsibility, other than alternative assumptions selected for the purpose of sensitivity testing, would be independently reasonable and appropriate in the aggregate.

- .30 The actuary would select independently reasonable assumptions. The following are examples:
- For a typical defined benefit pension plan valuation, the actuary would adopt an explicit investment assumption, as well as an explicit expense assumption rather than using implicit assumptions incorporated within a net discount rate. However, for a small defined benefit pension plan, the actuary may choose to use approximations for the investment expenses.
  - For a typical non-participating life insurance portfolio where experience is not passed on to policy owners, all assumptions would be established independently. However, for a typical participating life insurance portfolio where experience is passed on to policy owners through changes to the dividend scale, a reasonable representation of reality would be to assume that the current dividend scale and current experience persist into the future, as long as any implicit offsets in assumptions simplify the valuation and do not materially affect the amount of the valuation.
- .31 The actuary would avoid the use of independently reasonable assumptions that are inconsistent or biased in the same direction, either of which might result in the assumptions not being reasonable in the aggregate. If an assumption is prescribed, is mandated by law or is stipulated by the terms of the engagement, it would not be appropriate to compensate for this prescription or stipulation by modifying other assumptions. The remaining assumptions would be reasonable in the aggregate and to the extent possible be independently reasonable.
- .32 The use of independently reasonable assumptions implies that each assumption is explicitly defined. However, there would be no requirement to use explicit assumptions in the model specification, as long as the result of using that model does not produce a material error. For example, for pension valuations, use of a discount rate net of expenses may produce a value very close to the value obtained by using explicit assumptions. In this case, the actuary would disclose both the gross investment rate assumption and the expense assumption.

**Stipulated or mandated assumptions**

- .33 Use of an assumption stipulated by the terms of the engagement is use of the work of another person.
- .34 If the assumption is mandated by law and an amendment to the law is virtually definitive, it may be useful to report a result that reflects the amendment.



### Discount rate

- .35 The use of a discount rate is inherent in the actuarial present value method. The discount rate may be constant or it may vary over time. In selecting the best estimate assumption for the discount rate, the actuary, consistent with the circumstances affecting the work, may either
- Take into account the expected investment returns of the assets that support the liabilities; or
  - Reflect interest rates on relevant fixed income reference securities.
- .36 In selecting the best estimate assumption for the discount rate, the actuary, consistent with the circumstances affecting the work, may assume that the yields on fixed income investments at future dates, either
- Remain at levels applicable at the calculation date; or
  - Revert in the long term to expected levels.

### 1630 Provision for adverse deviations

- .01 The actuary should include a provision for adverse deviations in calculations only to the extent required by the terms of the actuary's engagement or as mandated by law or as prescribed by practice-specific standards. [Effective February 1, 2018]

### 1640 Comparison of current and prior assumptions

- .01 Unless the actuary reports the inconsistency, the assumptions for a calculation for a periodic report should be consistent with those of the prior calculation. [Effective February 1, 2018]
- .02 The definition of consistency for the purpose of this recommendation varies among practice areas. For example,
- For advice on funding a pension plan, the assumption at a calculation date is consistent with the corresponding assumption at the prior calculation date if the two are numerically the same; and
  - For valuation of an insurer's insurance contract liabilities for its financial reporting, an assumption at a calculation date is consistent with the corresponding assumption at the prior calculation date if the two assumptions
    - Each reflect the conditions and outlook at their respective calculation dates in the case of a best estimate assumption;

- Each reflect the risks at their respective calculation dates in the case of a margin for adverse deviations; and
  - Are located at the same point within the range of accepted actuarial practice.
- .03 If the assumptions are not so consistent, the actuary would report the inconsistency. If practical, useful and appropriate under the terms of the engagement, the report would quantify the effect of the inconsistency.

## 1700 Reporting

### 1710 Reporting: external user report

.01 In an external user report, the actuary should

- Identify the client or employer;
- Describe the work, its purpose, and its users;
- Say that use of the report may not be suitable for another purpose;
- Say whether or not the work is in accordance with accepted actuarial practice in Canada and, if not, disclose the deviation from that practice;
- If useful, disclose any unusual application of accepted actuarial practice;
- If the report is supported by the use of a model, disclose limitations in the model relevant to the intended purpose;
- Disclose any aspect of the work for which the actuary does not take responsibility;
- Describe each assumption used for the work that is material to the results of the work, including the extent of any margin for adverse deviations included with respect to each such assumption;
- Provide the rationale for each such assumption that is material to the results of the work;
- For matters requiring an assumption other than a model or data assumption, disclose any assumption that is different from assumption of continuance of the status quo and, if practical, useful, and appropriate under the terms of the engagement, disclose the effect of alternative assumptions;
- Describe the methods used for the work;
- In the case of a periodic report, disclose any inconsistency between the assumptions and methods of the current and prior reports and the rationale for such inconsistency;
- Describe any subsequent event that is not taken into account in the work;
- Disclose any reservation;
- Express an opinion on the assumptions and methods used for the work;
- Express an opinion on the results of the work;
- Identify himself or herself and sign the report; and
- Date the report. [Effective February 1, 2018]

- .02 Any description or disclosure may be in material referred to in the report and either accompany the report or plausibly be available to users. [Effective February 1, 2018]
- .03 Subsequently, the actuary should respond to a user's request for explanation except if that is contrary to the terms of the engagement. [Effective February 1, 2018]
- .04 Subsequently, the actuary should withdraw or amend the report if information comes to hand after the report date that invalidates the report. [Effective February 1, 2018]
- .05 A duty of confidentiality in an appropriate engagement supersedes any of the foregoing portions of this recommendation with which it conflicts. [Effective February 1, 2018]

#### **Description and disclosure in general**

- .06 The range of appropriate reports is relatively narrow for external user reports as compared to that for internal user reports. An external user report would be relatively formal and detailed when the actuary does not communicate directly with users or when the interests of an external user and of the actuary's client or employer are not the same.
- .07 Appropriate description and disclosure in a report strike a balance between too little and too much. Too little disclosure deprives the user of needed information. Too much disclosure may exaggerate the importance of minor matters, imply a diminution of the actuary's responsibility for the work, or make the report hard to read.
- .08 The appropriate criterion for description and disclosure is the question, "What qualitative and quantitative information best serves the user's understanding and decision-making?" The question, "What information does the user want?", is an insufficient criterion because the circumstances affecting the work may make the actuary aware of information needs of which the user is unaware.
- .09 The actuary would consider and address the sensitivity of the results of the work to variations in key assumptions where practical, useful, and consistent with the terms of the engagement.
- .10 Disclosure need not necessarily be in the report itself except if its importance so warrants or if it cannot be referenced in material available to users. Disclosure in a short report may place undue emphasis on the information disclosed.















- .02 The range of appropriate reports is wider for internal user reports than for external user reports. At one end of the range, a formal internal user report may differ little from an external user report. At the other end of the range, an informal, abbreviated, even oral, report may suffice for a representative of the actuary's employer or client with whom the actuary communicates frequently and who is well-versed in the subject of the report. To abbreviate the standards for an internal user report is efficient for both the actuary and the user provided that complete and clear communication is not thereby compromised.

### **1730 Reporting: oral report**

- .01 Oral reporting, especially to an internal user, is both useful and inevitable in some situations. The disadvantage of oral reporting is that the actuary and user may have differing recollections of what was reported. It is therefore good practice to confirm an oral report in writing, especially when there is an external user, or to record it in documentation.
- .02 Except for signature and report date, the standards are the same for both oral and written reports.

### **1740 Summary report**

- .01 Where required by practice-specific standards, the actuary should prepare a summary report.  
[Effective February 1, 2018]

- .02 The practice-specific standards specify the language to be used in the summary report.
- .03 The purpose of the summary report is to simplify the actuary's communication with users and may be incorporated in a report prepared by the actuary's employer or client; for example, the financial statements of an insurer, a pension plan or a public personal injury compensation plan. Such a report does not constitute an external user report.